

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date
20 January 2005 (20.01.2005)

PCT

(10) International Publication Number
WO 2005/005276 A1

(51) International Patent Classification?: B65D 75/58

AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CI, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EB, EG, ES, FI, GR, GD, GL, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KO, KP, KR, KZ, LC, LK, LB, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW.

(21) International Application Number:
PCT/SK2004/001125

(22) International Filing Date: 9 July 2004 (09.07.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0302057-5 10 July 2003 (10.07.2003) SE

(71) Applicant: SCA HYGIENE PRODUCTS AB (SE/SE);
S-40503 Göteborg (SE).

(72) Inventors: HERMANSSON, Sofia; Hagens Stationsväg 40, S-42671 Västra Frölunda (SE). STENBERG, Anders; Knapelyckan 576, S-43992 Örsunda (SE). HERMANSSON, Kent; Cirkusgatan 7, S-426 54 Västra Frölunda (SE).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM,

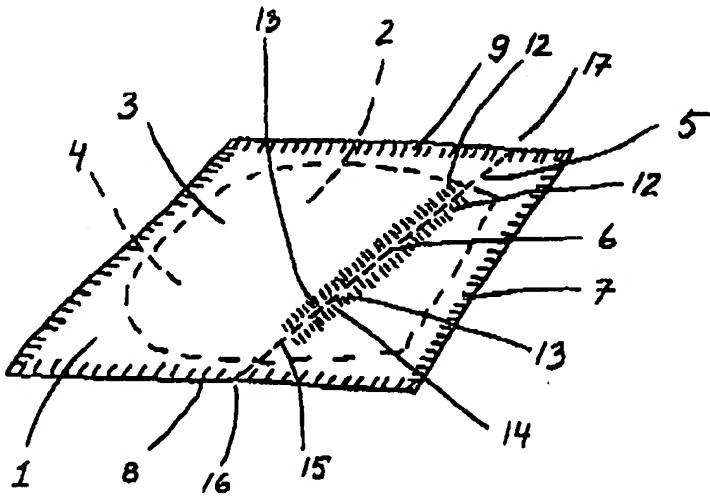
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BR, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with International search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: OPENING DEVICE FOR PACKAGING WRAPPER



WO 2005/005276 A1

(57) Abstract: Packing wrap (1) for a packing-configured individually packed absorbent article (2), such as a sanitary towel, a panty liner or an incontinence pad, intended to enclose the absorbent article (2), comprising a first material piece (3) arranged over the first surface of the absorbent article (2) and a second material piece (4) arranged over the second surface of the absorbent article (2), comprising an opening location (5) having a longitudinal extent, and comprising means (12) for tactile detection of the opening location, the means (12) for tactile detection being arranged adjacent to the opening location (5). The means (12) for tactile detection has a longitudinal extent, the means (12) being arranged essentially parallel to the longitudinal extent of the opening location (5).

WO 2005/005276

PCT/SE2004/001125

1

OPENING DEVICE FOR PACKAGING WRAPPER

TECHNICAL FIELD

5

The invention relates to a packing wrap for a packing-configured individually packed absorbent article, such as a sanitary towel, a panty liner or an incontinence pad, intended to enclose the absorbent article, comprising a first material piece arranged over the first surface of the absorbent article and

10 10 a second material piece arranged over the second surface of the absorbent article, comprising an opening location having a longitudinal extent, and comprising means for tactile detection of the opening location, the means for tactile detection being arranged adjacent to the opening location.

15 15 BACKGROUND ART

It is advantageous for several reasons to pack single absorbent articles of the kind referred to in the introduction in individual packing wraps. In this way, small, handy packs are obtained, which can easily and conveniently be

20 20 carried, for example in a handbag, or in a pocket, and from which an article can be removed when necessary. Such individual packs ensure that the article is protected against soiling and crumpling until use and are therefore greatly appreciated by users. With suitable design of the packing wraps, these can also serve as wrappers for used articles, which can thus be

25 25 disposed of in a hygienic and aesthetically acceptable way.

A common way of individually packing absorbent articles is first to fold them together into a smaller format and then to wrap them in a thin packing wrap made of plastic or paper. Such a packing wrap often consists of a

30 30 rectangular material piece which has been folded in the transverse direction around the folded packing-configured absorbent article. The packing wrap is

WO 2005/005276

PCT/SE2004/001125

2

subsequently joined together along its open edges so that a more or less sealed bag-like container for the absorbent article is formed.

5 The absorbent article to be packed individually is usually folded once or twice before the packing wrap is folded around the article. Small absorbent articles such as, for example, panty liners are sometimes also packed in an unfolded state.

10 One type of individual packing is described in the document GB 2,221,667 A where an absorbent article is doubled in a first step, after which a packing wrap is folded around the article. The packing wrap is finally sealed around its three sides which are open after folding.

15 When an individual packing of the type described in GB 2,221,667 A is to be opened, this is usually effected by the seal along one or more of the edges being broken open, after which the absorbent article can be taken out of its packing.

20 Another type of individual packing has separate material pieces arranged on the upper side and the lower side of a folded or unfolded absorbent article. The two material pieces are then sealed along their entire periphery, a packing wrap then being formed. These individual packings normally have a rectangular or square shape, but packings profiled according to the contour of the absorbent article are also found. Profiled individual packings are most 25 common for small absorbent articles such as panty liners and small sanitary towels. Individual packings of the kind described can be opened in a number of different ways. For individual packings made of paper, the commonest method is quite simply to tear off one edge when the packing is to be opened.

30 For individual packings made of plastic films, the opening problem has often been solved by arranging a weakening of the film material along one of the

WO 2005/005276

PCT/SE2004/00112S

3

edges of the individual packing, it then being possible for the film material to be torn apart along the weakening. The commonest and simplest type of weakening consists of a perforation along a length of the periphery of the individual packing. It is usual to arrange the perforation parallel and adjacent 5 to one of the edges of the packing wrap, so that an edge strip is quite simply torn off when the packing is opened. In this connection, the perforation should be arranged in both the front and rear material pieces of the packing wrap and also suitably extend all the way from one edge to the opposite edge of the packing.

10

Edge seals which can be broken open are also found. The edge seal along part of the periphery of the individual packing is then weaker than remaining parts of the edge seal, so that this part of the periphery can easily be broken open when the individual packing is to be opened.

15

A type of individual packing for absorbent articles is described in patent EP 0,865,264.

20

The packing in accordance with this document is rectangular and comprises a special opening tab. The opening tab is connected to the rest of the packing along one of its edges, while the opposite edge is free and constitutes the opening location of the packing. The free edge of the opening tab extends over one surface of the packing parallel to two of the edges of the packing.

25

The packing has a special openable tape tab arranged on the opening tab, intended to hold the free edge of the opening tab in place against the surface of the packing wrap. Such tape tabs are also arranged in order to facilitate closing of a used absorbent article placed inside the packing wrap before its 30 disposal.

Tape tabs of the kind described can also serve as means for detection of the positioning of the opening. This detection possibility is advantageous when a

WO 2005/005276

PCT/SE2004/001125

4

person with reduced ability to see is to open the packing wrap as s/he can feel where the opening is located.

5 A tape tab on the packing wrap according to the description above nevertheless involves certain disadvantages, a first being the extra material cost the tape tab involves. A second disadvantage is that the manufacturing rate is reduced as the separate tape tabs have to be applied to the packing wrap, which also has a negative effect on the cost of the individually packed absorbent article. A third disadvantage is that tape tabs of the kind described

10 are in principle suitable only for packings comprising an opening tab.

In spite of many improvements having been made as far as the openability of individual packings is concerned, the problem still remains of finding where on the packing the opening is located when it is to be opened.

15 This is a particularly irritating problem for people with impaired vision, which is not uncommon especially among elderly users of absorbent articles of the incontinence pad type.

20 Existing solutions using colour-markings which show where on the individual packing the opening is located are not a functional solution for weakly sighted users either.

25 Lastly, it is not an appropriate alternative for weakly sighted incontinent users of incontinence pads to ask another person for help with opening an individually packed absorbent article because incontinence is a particularly taboo complaint which sufferers are reluctant to reveal to people around them.

30 A need therefore remains for an improved packing wrap for individually packed absorbent articles where the opening can be detected with the aid of

WO 2005/005276

PCT/SE2004/001125

5

the sense of touch and which is simple and inexpensive to manufacture and can be manufactured at high rates.

DISCLOSURE OF THE INVENTION

5

By means of the present invention, a packing wrap of the kind referred to in the introduction has been produced, which packing wrap essentially eliminates the problems, especially for weakly sighted users, associated with previously known packing wraps for individually packed absorbent articles.

10

A packing wrap, made according to the invention, for an individually packed absorbent article of the kind referred to in the introduction is in this connection characterized mainly in that the means for tactile detection has a longitudinal extent, the means being arranged essentially parallel to the 15 longitudinal extent of the opening location.

According to one embodiment, in order to render detection of the longitudinal extent of the opening location more effective, the means for tactile detection extends over a distance which exceeds 30% of the length of the opening 20 location, preferably more than 50% of the length of the opening location.

According to another embodiment, the opening location consists of a weakening in at least one of the first and second material pieces of the packing wrap, the weakening which can be broken open being arranged 25 along a line.

In an alternative embodiment of the invention, the weakening consists of a perforation arranged in at least one of the first and second material pieces of the packing wrap. According to one embodiment, the weakening is arranged 30 in both the first and the second material piece, at least one of the material pieces having means for tactile detection adjacent to the weakening.

WO 2005/005276

PCT/SE2004/001125

8

In an alternative embodiment, the weakening can consist of a join in the packing material.

15 In one embodiment of the invention, the join constitutes the means for tactile detection.

In accordance with one embodiment of the invention, the means for tactile detection can be arranged along only one side of the weakening.

10 According to a preferred embodiment of the invention, the means for tactile detection consists of at least one embossed region. This embodiment is particularly advantageous when the packing material consists of a plastic film or a paper material because it is then possible to emboss directly on the packing material, and no extra material cost arises.

15 In an alternative embodiment of the invention, the means for tactile detection consists of at least one extra material strip. The material strip is then connected to the material of the packing wrap in a suitable way.

20 The extra material strip can consist of a nonwoven material, a paper material, a foam material or another suitable material. It is important that the extra material strip differs from the material of the packing wrap as far as tactile detection is concerned.

25 According to a preferred embodiment, the extra material strip can consist of one or more thread-shaped materials. Thread-shaped materials are easy to detect with the sense of touch in the fingers and simple to handle in a manufacturing machine at high machines rates. In accordance with one embodiment of the invention, the means for tactile detection is arranged by

30 at least one surface on the packing wrap being coated with a material which has higher or lower friction than the other surfaces of the packing wrap.

WO 2005/005276

PCT/SE2004/001125

Frictional differences between different adjacent surfaces are extremely easy for a weakly sighted person to detect by means of the sense of touch.

According to a particularly preferred embodiment, the packing wrap has a
5 rectangular shape. In this connection, the two material pieces of the packing
wrap extend outside the periphery of the absorbent article and are
interconnected in the area outside the periphery of the absorbent article. The
two material pieces can consist of one larger material piece which has been
folded around the packing-configured absorbent article or of two completely
10 separate material pieces.

One embodiment of the invention is characterized in that the packing wrap
has a rectangular shape, and in that the weakening runs essentially parallel
and adjacent to one of the edges of the packing wrap in at least one of the
15 first and second material pieces of the packing wrap. The connection
between the first material piece and the second material piece of the packing
wrap along the said edge then has a different texture compared with the
connection along the other edges of the packing wrap, the said different
connection constituting the means for tactile detection.

20 Another embodiment of the invention has a rectangular shape and is further
characterized in that the weakening constituting the opening location
consists of that part of the connection between the first material piece and
the second material piece of the packing wrap which has a different texture.
25 The said connection can be broken open and constitutes both the opening
location of the packing wrap and its means for tactile detection.

WO 2005/005276

PCT/SE2004/001125

BRIEF DESCRIPTION OF FIGURES

The invention will be described in greater detail below with reference to the illustrative embodiments shown in accompanying figures, in which

5

Figure 1 shows a closed packing wrap enclosing an incontinence pad according to a first embodiment;

10

Figure 2 shows the packing wrap according to Figure 1 in a partly opened state;

Figure 3 shows an opened packing wrap containing a packed incontinence pad according to a second embodiment;

15

Figure 4 shows a closed packing wrap enclosing a packed incontinence pad according to a third embodiment;

Figure 5 shows a packing wrap according to another embodiment;

20

Figure 6 shows a packing wrap according to one embodiment, and

Figure 7 shows a packing wrap according to another embodiment.

DESCRIPTION OF EMBODIMENTS

25

The invention relates to a packing wrap for an absorbent article of the sanitary towel, panty liner, incontinence pad or baby diaper type.

30

The packing wrap 1 shown in Figures 1 and 2 relates to a packing wrap 1 for an incontinence pad 2 intended for lighter forms of incontinence, so called light incontinence.

WO 2005/005276

PCT/SE2004/001125

9

The incontinence pad 2 inside the packing wrap 1 has a conventional construction and comprises a first, liquid-permeable covering layer arranged on that side of the incontinence pad which is intended to face the wearer during use, a second, liquid-tight covering layer arranged on that side of the 5 incontinence pad 2 which is intended to face away from the wearer during use, and an absorbent body enclosed between the two covering layers.

The absorbent body can be constructed from one or more layers of cellulose fluff pulp. In this connection, cellulose fluff pulp can be mixed with fibres or 10 particles of a highly absorbent polymer material of the kind which chemically binds great quantities of liquid during absorption while forming a liquid-containing gel. The absorbent body can also comprise highly absorbent polymer material arranged in one or more layers inside the absorbent body or adjacent to the surface or surfaces of the absorbent body. The absorbent 15 body can also include components of a non-absorbent nature in order to improve the properties of the absorbent body. Examples of such components are bonding fibres, shape-stabilizing components, strengthening fibres or the like.

20 Various types of layer and material provided for improved spreading of liquid can also form part of the absorbent body.

The absorbent body can of course also consist of other types of absorption material, such as absorbent nonwoven materials, absorbent foams, textile 25 materials, peat, or mixtures of different kinds of absorption material. Special layers for rapidly receiving large quantities of liquid and temporarily storing this liquid in order then to discharge the temporarily stored liquid to other parts of the absorbent body can also be included in incontinence pads of the kind described. These receiving layers are then normally arranged between 30 the liquid-permeable covering layer and the absorbent body of the incontinence pad.

WO 2005/005276

PCT/SE2004/001125

10

The two covering layers of the absorbent article project past the edges of the absorbent body, the projecting portions of the covering layers being interconnected around the periphery of the absorbent body, for example by means of gluing, sewing, or by welding using heat or ultrasound.

5

The material in the liquid-permeable covering layer can be of any suitable kind. Examples of common liquid-permeable covering materials are various types of bonded nonwoven materials, perforated plastic films, net and also open-cell or perforated foam materials. Liquid-permeable covering materials 10 which consist of continuous thin fibres which extend mainly in the longitudinal direction or transverse direction of the absorbent article are also found. Laminates consisting of two or more of the abovementioned possible covering materials are also common, as are coverings consisting of different materials in different parts of the surface.

15

An incontinence pad which comprises absorbent bodies with particularly great strength and wear-resistance can even function without any extra liquid-permeable covering layer being required on that side of the incontinence pad which faces the wearer during use.

20

The liquid-tight covering layer suitably consists of a thin plastic film, or of a nonwoven material which has been made liquid-tight by coating or treatment with a liquid-resistant material. Other types of liquid-blocking material can of course also be used, such as, for example, plastic foam with closed cells, 25 various liquid-blocking laminates etc. In order that the incontinence pad 2 will feel airy and pleasant to wear, it is suitable for the liquid-tight covering layer 3 to have a certain permeability for air and water vapour. The liquid-tight covering layer can also be integrated in the absorbent body and consist of, for example, a skin-like surface on an absorbent foam body.

30

On the side which is intended to face away from the wearer during use, the incontinence pad 2 is provided with a fastening arrangement for fixing to the

WO 2005/005276

PCT/SE2004/001125

11

briefs of the wearer. The fastening arrangement can consist of one or more longitudinal adhesive strands, or of what are known as hook and loop surfaces or the like. When the fastening arrangement consists of adhesive strands, these are usually covered by a release-agent-treated protective 5 layer.

In connection with or immediately prior to the incontinence pad 2 being placed in its packing wrap 1, the incontinence pad 2 has been folded around two transverse folding lines. In this connection, the folding has been 10 arranged so that each folded part constitutes approximately a third of the length of the incontinence pad 2, the folded incontinence pad 2 having a length corresponding to a third of the total length of the incontinence pad 2. The folding has been carried out so that that surface of the incontinence pad 2 which is intended to face away from the wearer during use of the 15 incontinence pad 2 is the outwardly exposed surface when the incontinence pad 2 is folded.

Packing configurations where the incontinence pad 2 is doubled or unfolded are also found.

20 The packing wrap 1 shown in Figures 1 and 2 comprises a first material piece 3 arranged over one surface of the incontinence pad 2 when the latter is folded into its packing configuration, and a second material piece 4 arranged over the second surface of the incontinence pad 2.

25 The two material pieces 3, 4 extend outside the periphery of the incontinence pad 2 and are interconnected along the entire periphery of the packing wrap 1. The connection 7 suitably consists of a thermal weld, an ultrasonic weld or the like.

30 For some types of packing wrap 1, the first and second material pieces 3, 4 can consist of one larger material piece which has been folded around the

WO 2005/005276

PCT/SE2004/001125

12

Incontinence pad, the connection 7 along one of the edges of the packing wrap 1 consisting of the said fold.

The packing wrap 1 can consist of a number of different materials such as
6 plastic film, paper, nonwoven or the like.

The packing wrap 1 comprises an opening location 5 which extends along a line essentially diagonally over the first material piece 3, the opening location 5 consisting of a weakening 6 in the material piece 3 in the form of a
10 perforation 16. Alternative methods of weakening the opening location 5 are also conceivable, such as, for example, making the material piece 3 thinner.

The opening location can be arranged alternatively in either of the material pieces 3, 4 or in both material pieces 3, 4.

15

It is also possible for the opening location 5 to consist of a slit in the material piece 3, in which case it is suitable that the slit comprises some kind of overlapping material in order to prevent impurities of various kinds entering the packing wrap 1.

20

The opening location 5 can, as shown in Figures 1 and 2, extend across and essentially diagonally over the whole packing wrap 1. It is also conceivable for the opening location 5 to extend over a shorter distance than over the whole packing wrap 1.

25

The opening location 5 can also extend along a line parallel to any one of the edges of the packing wrap 1, or along a curved line arranged diagonally over the packing wrap 1, or the like.

30 Figure 1 shows a packing wrap 1 where the opening location 5 is closed, while Figure 2 shows a corresponding packing wrap 1 where the opening

WO 2005/005276

PCT/SE2004/001125

13

location 5 is open and where the incontinence pad 2 is visible inside the packing wrap 1.

5 The packing wrap 1 is opened by the weakening 6 being broken open, that is to say the material piece 3, 4 which comprises the opening location 5 is torn in two along the perforation 15.

10 Figure 3 shows an embodiment of the packing wrap 1 in an opened state, where the opening location 5 extended over both the first and the second material piece 3, 4 before the packing wrap 1 was opened. The opening location 5 extends over both material pieces 3, 4 from one edge 8 of each material piece 3, 4 to the opposite edge 9 of each material piece 3, 4. The respective extents of the opening location 5 in the first and the second material piece 3, 4 are then suitably arranged so that they extend essentially 15 parallel over each material piece 3, 4 from a common starting point 16 at one edge 8 to a common terminating point 17 at the opposite edge 9.

20 When such a packing wrap 1 is opened, the packing wrap 1 is usually divided into two parts 10, 11, but it is also conceivable for the two parts 10, 11 to continue to hold together at the starting point 16 or the terminating point 17 after the packing wrap 1 has been opened.

25 A packing wrap 1 according to the invention is characterized mainly in that it comprises means 12 for tactile detection of the position of the opening location 5.

30 The packing wrap 1 shown in Figures 1, 2 and 3 is distinguished in that the opening location 5 can be detected with the aid of the sense of touch. In this connection, the packing wrap 1 comprises embossed regions 13 adjacent to the opening location 5. The embossed regions 13 have a width and a length and run essentially parallel to the opening location 5, an embossed region 13 running on each side of the opening location 5.

WO 2005/005276

PCT/SE2004/001125

14

In alternative embodiments, it is conceivable that only one embossed region 13 runs parallel to the perforation 15 of the opening location 5 along only one of its sides.

- 5 It is also conceivable to use a number of shorter embossed regions 13 with unembossed regions between the embossed regions 13, the embossed regions 13 being arranged along one side or both sides of the opening location 5.
- 10 The embossed regions 13 extend along roughly 60% of the length of the perforation 15.

The embossed regions 13 do not have to extend along the entire length of the perforation 15, but it is suitable that they extend over more than 30% of 15 the total length of the opening location, preferably more than 50% of the length.

- 20 The embossed regions 13 are arranged so that they differ from the texture of the embossed material piece 3, 4 as far as touch is concerned, it being possible for the embossed regions 13 and adjacent perforation 15 to be detected easily with the sense of touch in, for example, the fingers of the person who is to open the packing wrap 1.

Embossed regions 13 are brought about by the material piece 3, 4 passing 25 through an embossing unit in a manufacturing step before the material piece 3, 4 is applied over the incontinence pad 2. In this connection, the embossing unit has a male part comprising projecting embossing bodies and a female part comprising sunken embossing recesses, the male part and the female part being arranged synchronously. When that region of the material piece 3, 4 which is to be embossed passes between the male part and the 30 female part of the embossing unit, the material piece 3, 4 is deformed plastically, permanently deformed protuberances being obtained in the

WO 2005/005276

PCT/SE2004/001125

15

material. Alternative ways of producing embossed regions are also conceivable.

5 In the illustrative embodiment, the pattern of the embossed regions 13 consists of straight embossed lines 14 arranged at right angles to the opening location 5.

10 The embossing pattern can vary within wide limits and can consist of, for example, lines parallel to the opening location 5, a number of small circles arranged parallel to the opening location or the like.

Embossing involves the great advantage that no costly extra material has to be added, because it is the already present material piece 3, 4 which is modified.

15

The material piece 3, 4 must, at least in the area to be embossed, comprise an embossable material. Suitable embossable materials are various types of plastic film, paper or the like.

20 Figure 4 shows another embodiment of the invention. In this embodiment, the opening location 5 consists of an openable join 18 in the first material piece 3. The join 18 is designed as a ridge 19 which projects from the surface of the material piece 3, the ridge 19 also constituting the means for tactile detection 12 and being easy to detect with the aid of the sense of 25 touch.

Alternative designs of the join 18 are also conceivable; for example, the join 18 can be what is known as a lap join. A lap join means that the component parts of the material piece 3 overlap one another at the join 18. Such a join 30 18 is slightly more difficult to detect than a join 18 which consists of a ridge 19, for which reason an embossed region 13 or the like is advantageous adjacent to such an overlapping join 18.

WO 2005/005276

PCT/SE2004/001125

16

Another advantage of the embodiment according to Figure 4 is that the packing can be opened easily by bending the packing containing an article so that the surface comprising the ridge 19 has a convex configuration oriented at right angles to the ridge 19. The join 18 is then subjected to a 5 tensile stress which means that it breaks, the packing then opening.

Figure 5 shows another embodiment of the invention. The packing wrap 1 has a rectangular shape. The first and second material pieces 3, 4 consist of one larger material piece which has been folded around the incontinence 10 pad 2, after which three of the edges of the packing wrap 1 have been connected by means of a thermal weld, an ultrasonic weld or the like. The connection along the fourth edge of the packing wrap 1 consists of the said fold 21.

- 15 In accordance with this embodiment, the packing wrap 1 has been provided with an extra material strip 20 constituting the means for tactile detection 12. The material strip 20 extends essentially parallel to the opening location 5, over roughly 70% of its length.
- 20 The material strip 20 is connected to the packing wrap 1 by means of gluing, thermal welding, ultrasonic welding or the like on the outwardly oriented surface of the packing wrap 1.

The material strip 20 consists of a material which has different properties as 25 far as touch is concerned compared with the material of the packing wrap 1. Suitable materials are plastic strips with different friction properties, nonwoven strips, paper strips or the like.

The material strip 20 can of course also have another type of different 30 texture in relation to the material of the packing wrap 1; it can, for example, consist of an embossed material strip 20, a material strip 20 which is considerably more rigid than the material of the packing wrap 1, a material

WO 2005/005276

PCT/SE2004/001125

17

strip 20 which is thicker than the material of the packing wrap 1, or one which is different in another way.

5 The material strip 20 can also consist of a thread-shaped material which can be detected easily with the aid of the sense of touch in the fingers. It is possible, for example, for one or more threads to be arranged so that they extend essentially parallel to the opening location 5 of the packing wrap 1. The threads can consist of textile threads, rubber threads or the like, which differ from the material of the packing wrap 1 as far as touch is concerned.

10

Instead of a material strip 20, it is also conceivable to coat the material of the packing wrap 1 with a material which has different properties as far as touch is concerned compared with the material of the packing wrap 1. The coating can consist of, for example, rubber coating having increased friction, solid 15 particles which have been fixed in a glue film so that the surface feels rough, or the like.

The packing wrap 1 according to Figure 6 is shown in a partly opened state. The packing wrap 1 comprises a first material piece 3 arranged over one 20 surface of the incontinence pad 2 when this is folded into its packing configuration, and a second material piece 4 arranged over the other surface of the incontinence pad 2.

25 The two material pieces 3, 4 extend outside the periphery of the incontinence pad 2 and are interconnected along the entire periphery of the packing wrap 1.

30 The packing wrap 1 has a first type of connection 7 along three of the four edges of the packing wrap 1 and a second type of connection 22 along the fourth edge. The connections 7, 22 suitably consist of a thermal weld, an ultrasonic weld or the like. The connection 22 is less strong than the other

WO 2005/005276

PCT/SE2004/001125

18

connections 7, the connection 22 being openable and constituting the opening location 5 of the packing wrap 1.

5 The connection 22 also has a different pattern 23 compared with the connections 7 along the other edges of the packing wrap 1. The different pattern 23 constitutes the means 12 of the packing wrap for tactile detection of the opening location 5.

10 A packing wrap 1 where one connection 22 is weaker than the other connections 7 and the means 12 for tactile detection consists of an extra material strip, a thread-shaped material, a coating or the like is also conceivable.

15 Another alternative is to use the same connection pattern for all four edges of the packing wrap but to select a narrower or wider pattern along the edge which constitutes the opening location.

20 Figure 7 shows a packing wrap 1 according to another embodiment of the invention. The packing wrap 1 has a first type of connection 7 along three edges and a second type of connection 22 along its fourth edge. The connection 22 differs from the connection 7 in that it has a different pattern. The different connection 22 then constitutes the means 12 for tactile detection. The opening location 5 consists of a weakening 6 in the form of a perforation 15 in the material of the packing wrap 1 or the like.

25

The invention also comprises all conceivable combinations of the illustrative embodiments described.

30 Furthermore, the invention is not limited to the illustrative embodiments referred to above but is of course applicable for other embodiments within the scope of the following patent claims.

WO 2005/005276

PCT/SE2004/001125

19

PATENT CLAIMS

1. Packing wrap (1) for a packing-configured individually packed absorbent article (2), such as a sanitary towel, a panty liner or an incontinence pad, intended to enclose the absorbent article (2), comprising a first material piece (3) arranged over the first surface of the absorbent article (2) and a second material piece (4) arranged over the second surface of the absorbent article (2), comprising an opening location (5) having a longitudinal extent, and comprising means (12) for tactile detection of the opening location, the means (12) for tactile detection being arranged adjacent to the opening location (5), characterized in that the means (12) for tactile detection has a longitudinal extent, the means (12) being arranged essentially parallel to the longitudinal extent of the opening location (5).
- 15 2. Packing wrap (1) according to Claim 1, characterized in that the means (12) for tactile detection extends along more than 30% of the length of the opening location (5), preferably more than 50% of the length of the opening location (5).
- 20 3. Packing wrap (1) according to Claim 1 or 2, characterized in that the opening location (5) consists of a weakening (6) in at least one of the first and second material pieces (3, 4) of the packing wrap (1), the weakening (6) being arranged along a line, and the weakening (6) being capable of being broken open.
- 25 4. Packing wrap (1) according to Claim 3, characterized in that the weakening (6) consists of a perforation (15) arranged in at least one of the first and second material pieces (3, 4) of the packing wrap (1).
- 30 5. Packing wrap (1) according to Claim 3 or 4, characterized in that the weakening (6) is arranged in both the first material piece (3) and the second

WO 2005/005276

PCT/SE2004/001125

20

material piece (4), at least one of the material pieces having means (12) for tactile detection adjacent to the weakening (6).

6. Packing wrap (1) according to Claim 1, 2 or 3, characterized in that
5 the weakening (6) consists of a join in the packing wrap material.

7. Packing wrap (1) according to Claim 6, characterized in that the join
constitutes the means (12) for tactile detection.

10 8. Packing wrap (1) according to any one of Claims 1-6, characterized in
that the means (12) for tactile detection is arranged along only one side of
the weakening (6).

9. Packing wrap (1) according to any one of the preceding claims,
15 characterized in that the means (12) for tactile detection consists of at least
one embossed region (13).

10. Packing wrap (1) according to any one of Claims 1-8, characterized in
that the means (12) for tactile detection consists of at least one extra
20 material strip (20).

11. Packing wrap (1) according to Claim 10, characterized in that the
extra material strip (20) consists of a nonwoven material.

25 12. Packing wrap (1) according to Claim 10, characterized in that the
extra material strip (20) consists of a paper material.

13. Packing wrap (1) according to Claim 10, characterized in that the
extra material strip (20) consists of a foam material.

30

14. Packing wrap (1) according to Claim 10, characterized in that the
extra material strip (20) consists of at least one thread-shaped material.

WO 2005/005276

PCT/SE2004/001125

21

15. Packing wrap (1) according to any one of Claims 1-8, characterized in that the means (12) for tactile detection consists of at least one surface on the packing wrap (1) which is coated with a material which has higher or lower friction than the packing wrap (1).

5

16. Packing wrap (1) according to any one of the preceding claims, characterized in that the packing wrap has a rectangular shape, the two material pieces (3, 4) of the packing wrap (1) extending outside the periphery of the absorbent article, and the material pieces (3, 4) being interconnected.

10

17. Packing wrap (1) according to Claim 16, characterized in that the weakening (6) runs essentially parallel and adjacent to one of the edges of the packing wrap (1) in at least one of the first and second material pieces (3, 4) of the packing wrap (1), the connection (22) between the first material piece (3) and the second material piece (4) of the packing wrap (1) along the said edge having a different texture compared with the connection (7) along the other edges of the packing wrap (1), the said different connection (22) constituting the means (12) for tactile detection.

15

18. Packing wrap (1) according to Claim 17, characterized in that the weakening consists of the connection (22) between the first material piece (3) and the second material piece (4) of the packing wrap (1) which has a different texture, the said connection (22) being capable of being broken open and constituting the opening location of the packing wrap.

WO 2005/005276

PCT/SE2004/001125

1/7

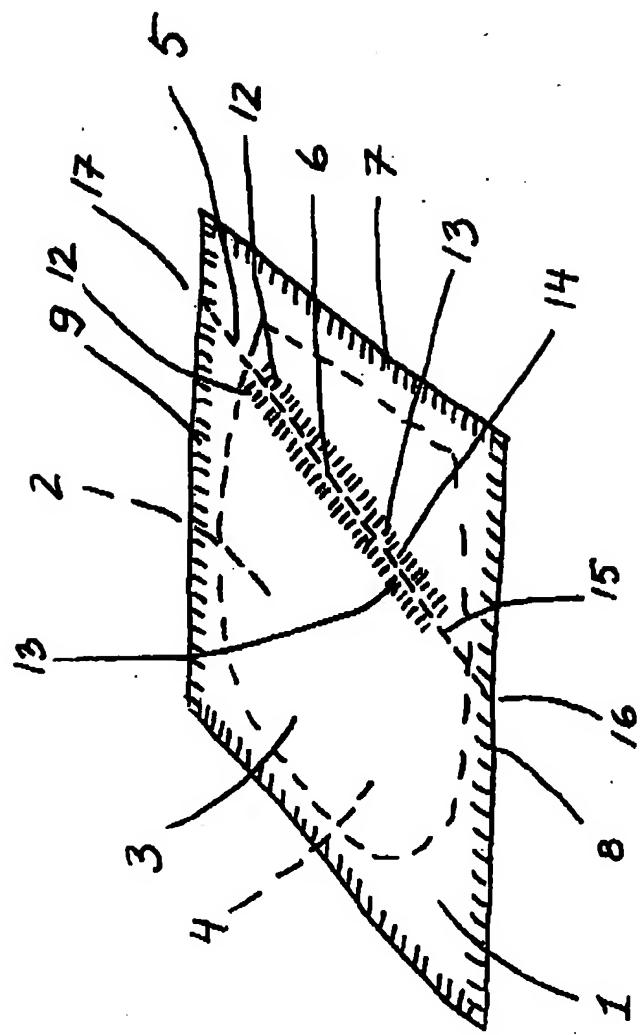


FIG. 1

WO 2005/005276

PCT/SE2004/001125

2/7

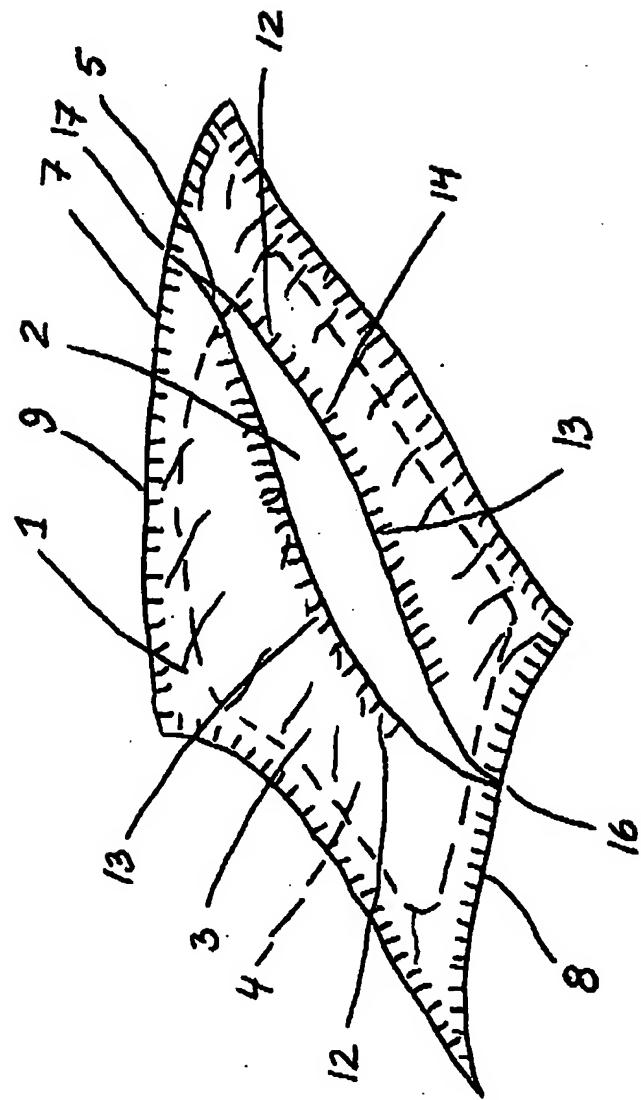


FIG. 2

SUBSTITUTE SHEET (RULE 26)

PAGE 28/37 * RCVD AT 2/4/2005 10:51:28 AM [Eastern Standard Time] * SVR:USPTO-EFXRF-14 * DMS:8729306 * CSID:920 721 0279 * DURATION (mm:ss):08:42

WO 2005/005276

PCT/SE2004/001125

3/7

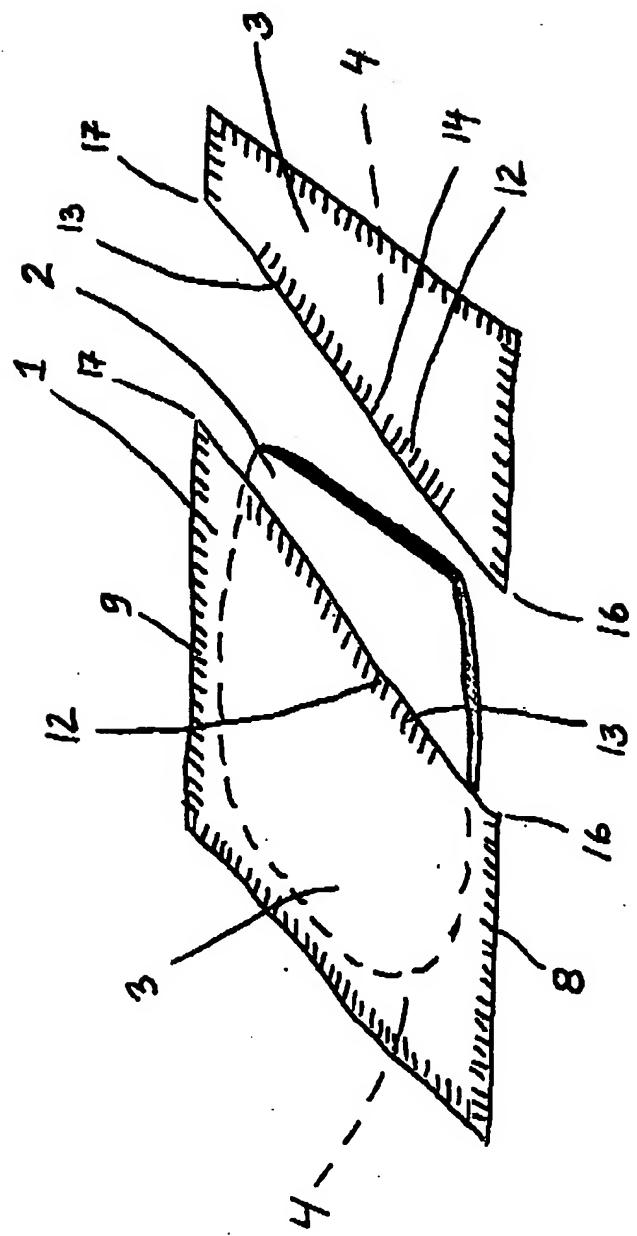


FIG. 3

SUBSTITUTE SHEET (RJII F 26)

PAGE 29/37 * RCV'D AT 2/4/2005 10:51:28 AM [Eastern Standard Time] * SVR:USPTO-EFXRF-14 * DMS:8729306 * CSID:920 721 0279 * DURATION (mm:ss):08:42

WO 2005/005276

PCT/SE2004/001125

47

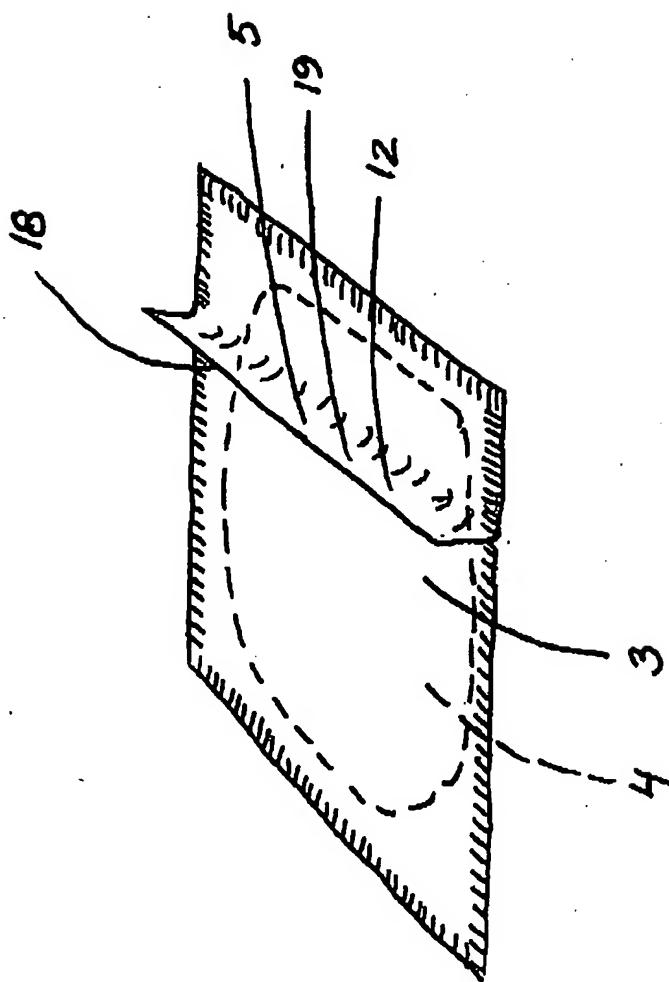


FIG. 4

WO 2005/005276

PCT/SE2004/001125

5/7

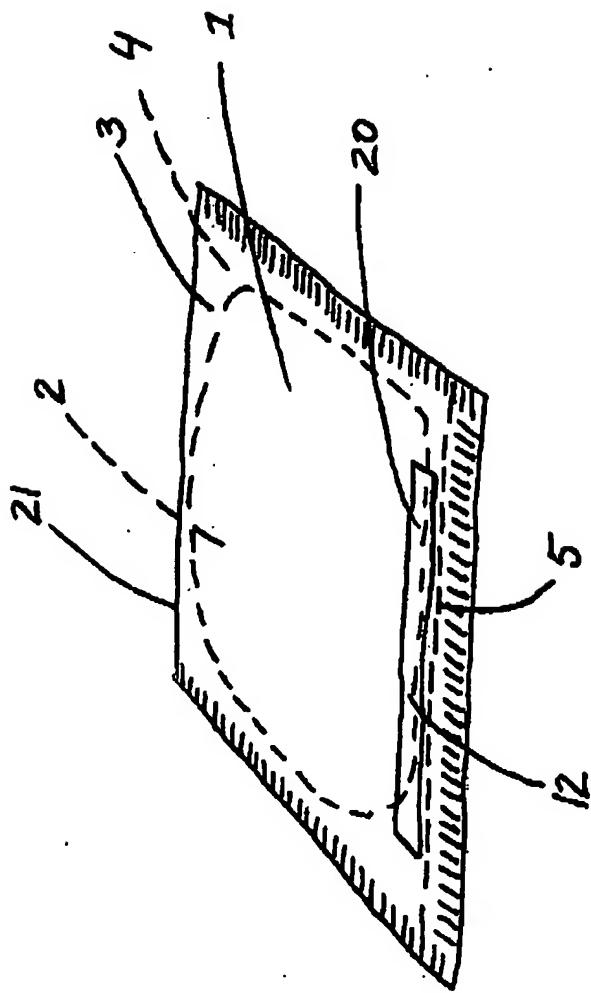


FIG. 5

SUBSTITUTED SHEET (R11 F 26)

PAGE 31/37 * RCV'D AT 2/4/2005 10:51:28 AM [Eastern Standard Time] * SVR:USPTO-EFXRF-14 * DMS:8729306 * CSID:9207210279 * DURATION (mm:ss):08:42

WO 2005/005276

PCT/SE2004/001125

6/7

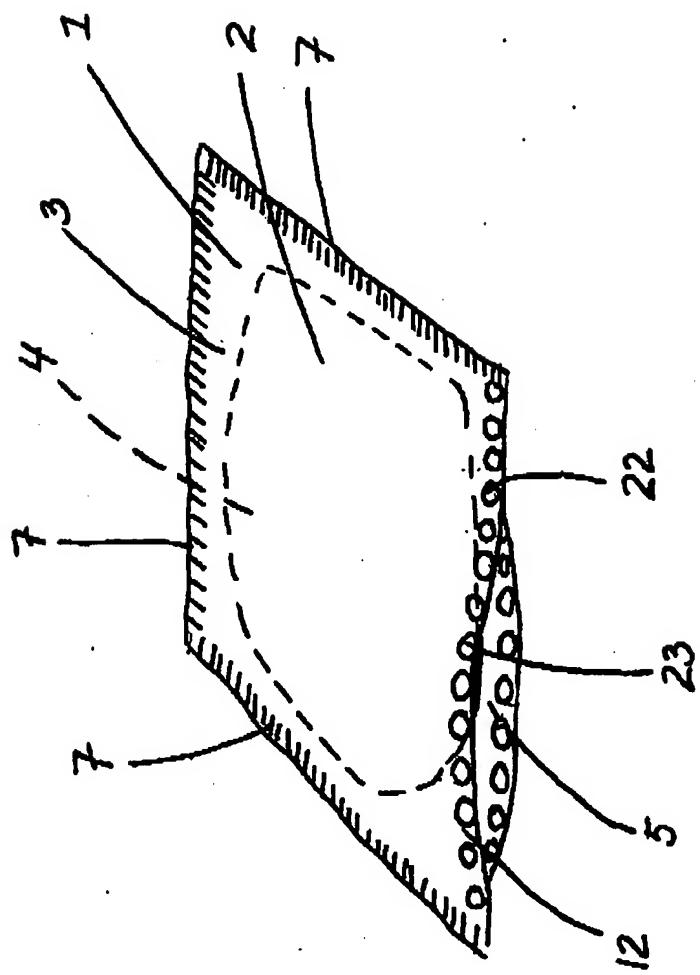


FIG. 6

WO 2005/005276

PCT/SE2004/001125

7/7

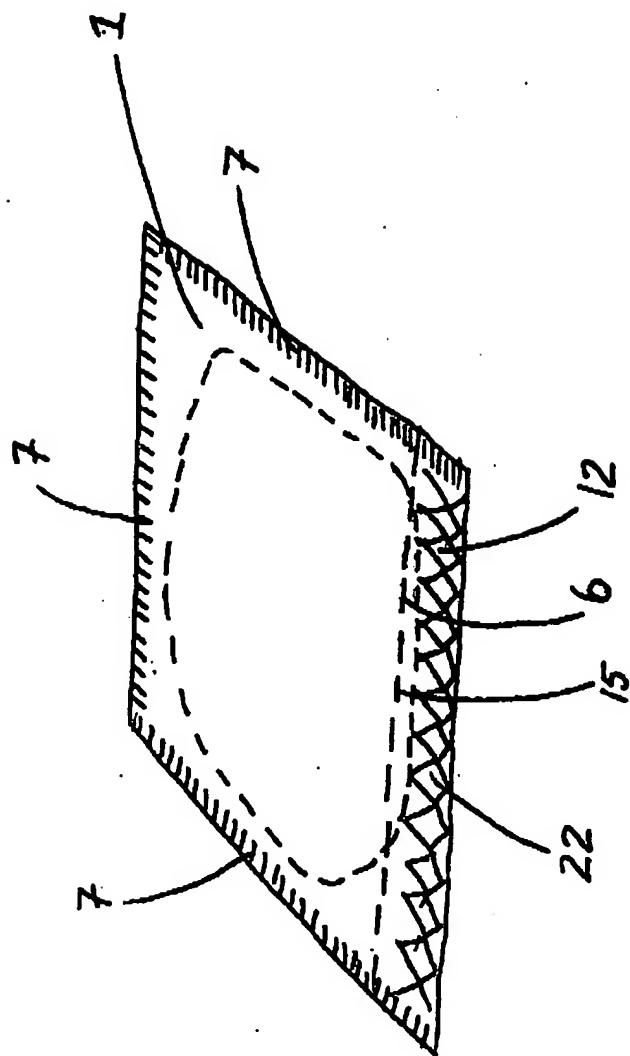


FIG. 7

SUBSTITUTE SHEET (RULE 26)

PAGE 33/37 * RCVD AT 2/4/2005 10:51:28 AM (Eastern Standard Time) * SVR:USPTO-EFXRF-1/4 * DNIS:8729306 * CSID:9207210279 * DURATION (mm:ss):08:42

INTERNATIONAL SEARCH REPORT

International Application No

PCT/SE2004/001125

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 B65D/5/68

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 B65D A61F

Documentation searched other than minimum documentation to the extent that such documents are included in the file(s) searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 041 928 A (JOUSINEN) 28 March 2000 (2000-03-28) column 2, line 23 - column 3, line 33: figures 1-3	1-5, 8, 9, 16, 17
X	DE 11 66 453 B (SELWYN BROWN) 26 March 1964 (1964-03-26) column 1, line 1 - line 34 column 3, line 6 - column 4, line 28; figures 1-4	1, 3, 4, 6-8, 10, 11, 17
X	EP 0 012 275 A (HOECHST) 25 June 1980 (1980-06-25) page 3, line 15 - page 5, line 5; figure 2	1, 2, 10-14

 Further documents are listed in the continuation of box C. Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the International filing date
- *L* document which may throw doubt on priority, claims) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document relating to an oral disclosure, use, exhibition or other means
- *P* document published prior to the International filing date but later than the priority date claimed

- *T* later document published after the International filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *C* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *V* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other given documents, such combination being obvious to a person skilled in the art
- *B* document member of the same patent family

Date of the actual completion of the International search

13 October 2004

Date of mailing of the International search report

20/10/2004

Name and mailing address of the ISA

European Patent Office, P.B. 5018 Patentlan 2
NL - 2280 MV Rijswijk
Tel (+31-70) 340-2040, Tx 31 651 epo nl
Fax: (+31-70) 340-3016

Authorized officer

Newell, P

INTERNATIONAL SEARCH REPORT

International Application No.
T/SE2004/001125

C(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Claims of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 2 221 667 A (SMITH) 14 February 1990 (1990-02-14) page 12, line 1 - page 15, line 5; figures	1,2,6,7, 16-18
X	WO 88/10219 A (MÖLNLYCKE) 29 December 1988 (1988-12-29) page 3, line 29 - page 4, line 31; figures	1,2
X	EP 0 450 247 A (AMERICAN NATIONAL CAN) 9 October 1991 (1991-10-09) column 7, line 6 - line 15 column 11, line 6 - line 28; figure 13	1,2,15
X	US 5 474 818 A (ULRICH) 12 December 1995 (1995-12-12) column 2, line 60 - column 3, line 23 column 5, line 10 - line 18; figures 1-3,15	1,2,16
X	DE 39 39 679 A (FRÖDRICH) 29 May 1991 (1991-05-29) column 2, line 57 - column 3, line 11; figures 1,2	1
A	WO 01/43674 A (BORZ) 21 June 2001 (2001-06-21) page 4, line 5 - line 19; figures	1
A	US 2003/004089 A1 (HUBER ET AL) 2 January 2003 (2003-01-02) the whole document	5
A	GB 2 249 295 A (CRISTOPHER MARTIN) 6 May 1992 (1992-05-06) the whole document	15

Form PCT/ISA2000 (continuation of second sheet) (January 2004)

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

/SE2004/001125

Patent document cited in search report		Publication date		Patent family member(s)		Publication date
US 6041928	A	28-03-2000	SE	510846 C2	28-06-1999	
			DE	69622205 D1	08-08-2002	
			DE	69622205 T2	27-03-2003	
			EP	0958189 A1	24-11-1999	
			ES	2179953 T3	01-02-2003	
			JP	11514547 T	14-12-1999	
			SE	9503905 A	07-05-1997	
			WO	9717267 A1	16-05-1997	
DE 1166453	B	26-03-1964		NONE		
EP 0012275	A	25-06-1980	DE	2852877 A1	19-06-1980	
			DK	519279 A	08-06-1980	
			EP	0012275 A1	25-06-1980	
GB 2221667	A	14-02-1990	AU	4185589 A	05-03-1990	
			EP	0428612 A1	29-05-1991	
			WO	9001311 A1	22-02-1990	
WO 8810219	A	29-12-1988	SE	464020 B	25-02-1991	
			AU	1960388 A	19-01-1989	
			DK	652489 A	21-12-1989	
			EP	0364486 A1	25-04-1990	
			NO	895148 A	20-12-1989	
			SE	8702582 A	23-12-1988	
			WO	8810219 A1	29-12-1988	
EP 0450247	A	09-10-1991	AT	118188 T	15-02-1995	
			BR	9101367 A	26-11-1991	
			CA	2039764 A1	05-10-1991	
			DE	69016777 D1	23-03-1995	
			EP	0450247 A2	09-10-1991	
			JP	5124650 A	21-05-1993	
			US	5512337 A	30-04-1996	
			US	5878549 A	09-03-1999	
US 5474818	A	12-12-1995	US	5181610 A	26-01-1993	
			AT	150725 T	15-04-1997	
			AU	4249593 A	13-12-1993	
			CA	2135766 A1	16-11-1993	
			DE	69309265 D1	30-04-1997	
			DE	69309265 T2	30-10-1997	
			EP	0639147 A1	22-02-1995	
			ES	2102033 T3	16-07-1997	
			GR	3023559 T3	29-08-1997	
			BR	9031656 T3	29-02-2000	
			JP	3228748 B2	12-11-2001	
			JP	8501043 T	06-02-1996	
			WO	9323310 A1	26-11-1993	
DE 3939679	A	29-05-1991	DE	3939679 A1	29-05-1991	
WO 0143674	A	21-06-2001	IT	TN990006 U1	13-06-2001	
			AU	4553800 A	25-06-2001	
			WO	0143674 A1	21-06-2001	
US 2003004089	A1	02-01-2003	DE	20020049 U1	22-03-2001	
			AT	258887 T	15-02-2004	

Form PCT/ISA/210 (patent family format) (January 2004)

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

/SE2004/001125

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2003004089	A1	CA 2400720 A1	30-05-2002
		WO 0242177 A1	30-05-2002
		DE 50101436 D1	11-03-2004
		DK 1261531 T3	07-06-2004
		EP 1261531 A1	04-12-2002
		JP 2004514477 T	20-05-2004
GB 2249295	A 06-05-1992	NONE	

Form PCT/ISA/210 (patent family citation) (January 2004)